

evidence produced, and largely confirmed the corrections already advanced by Rowland and others. A main cause of discrepancy had been found to be the variation of the thermal capacity of water with the temperature; and by an investigation in which this variation was determined, Griffiths elucidated and correlated fundamentally the work of previous observers, from Joule onward. Of special importance also, in the domain of chemical physics, was an investigation of the depression of the freezing point of water by very dilute admixture of dissolved substances, wherein he verified, with all the refinement of absolute physical determinations, that the change of freezing point ran exactly parallel to the electric conductivity when the dilution of the electrolysable salt was comparable to that of gases, being twice as much per molecule as the standard value of the depression for non-electrolytes.

BUCHANAN MEDAL.

The Buchanan medal is awarded to Mr. William Henry Power, C.B., F.R.S. Mr. Power's services to hygienic science and practice have extended over a period of more than thirty years, and have been of the most distinguished kind. He has himself personally conducted successful inquiries into the causes of the spread of various diseases, and has obtained results which have proved of the greatest benefit to mankind. Moreover, in his long connection with the medical department of the Local Government Board he has planned and directed numerous general and local investigations whereby our knowledge of disease, and of the methods of coping with it, have been greatly increased. The medical reports issued by the Local Government Board, which are universally regarded as among the most important contributions of our time to this subject, have for many years past been either written by him or owe much to his editorial criticism and supervision. It is not too much to say that no living man in this country has advanced the cause of scientific hygiene more than Mr. Power, or is more worthy of the distinction of the Buchanan medal.

In the evening of the anniversary meeting, the fellows of the society and their guests dined together at the Whitehall Rooms of the Hôtel Métropole. Lord Rayleigh was in the chair, and responded to the toast of the Royal Society proposed by Lord Dunedin. Speeches were also made by several of the medallists, and by Lord Fitzmaurice and the Dean of Westminster.

NOTES.

In proposing the toast of "The Royal Society" at the anniversary dinner on Saturday last, Lord Dunedin referred to the popularisation of science as one of the functions of a society which exists for the promotion of natural knowledge. This remark provides the subject of a letter by an anonymous correspondent in Tuesday's *Times*. The writer urges that the neglect of science in this country is largely due to the indifference shown by scientific men to the intellectual interests of the average reader. Few men of science make any attempt to describe their investigations in language which can be understood by men of culture without special scientific knowledge, and it is scarcely too much to say that most investigators are so closely absorbed in their particular researches that whether the world in general knows anything of the results or not is regarded as no concern of theirs. This spirit, and the obscure and diffuse manner in which scientific investigations are often described are to be deplored. Lord Rayleigh, in the presidential address which appears elsewhere in this issue, directs attention to the undigested material often presented as papers to scientific societies; and it seems as if the zeal for research is rarely accompanied by the aspiration for simplicity of expression. Prof. M. E. Sadler suggests in Wednesday's *Times* that the neglect of the teaching of the mother tongue in our schools provides a reason "why so many Englishmen of learning and high scientific attain-

ment are unable to express themselves in a lucid and stimulating way." It may be pointed out, however, that though rhetoric receives more attention in the United States than it does in this country, the style of scientific papers and other works from America is not superior to that of our own scientific literature. But whatever the explanation may be, there can be only one opinion as to the advantage of increasing interest in scientific work by making the results as widely known as possible.

THE formation of the Royal Society of Medicine has already been the subject of a congratulatory note in these columns. The inaugural dinner of the society, held on Tuesday last, December 3, was a remarkable testimony to the successful establishment of what Sir Ray Lankester described on that occasion as the National Academy of Medicine. The society consists of thirteen federated sections, representing fifteen pre-existing societies, and it is hoped that other sections will be included before long, so that no branch of medical knowledge will be unrepresented in the society. The number of fellows is upwards of 1800, and of members above 600, and there is every reason to anticipate that these numbers will be considerably increased now that the society is in full working order. The library, which has been strengthened by the inclusion of those of the Odontological and Obstetrical Societies with that of the Royal Medical and Chirurgical, now consists of upwards of 70,000 volumes, and in the reading-room of the society no fewer than eighty-nine British and 180 foreign periodicals can be consulted. Sir W. Church, president of the society, who presided at the dinner on Tuesday, bore testimony to the manner in which the various bodies now forming the Royal Society of Medicine have been willing to sacrifice somewhat of their independence and individual prestige for the common good. Never in the history of medicine has there been a time in which so wide a field has engaged the attention of medical men as the present. In every department of medicine, science has placed at the disposal of medical men new methods and fresh means, not only for the investigation, but also for the treatment of disease, and the ground to be covered in each branch of medicine must as time goes on necessarily increase. To provide every facility for diffusing the increased knowledge which is being gained and enable the profession to keep in touch with what is going on is perhaps at the present time the main object of the society; but the time will come, and that soon, when the Royal Society of Medicine will be in a position, not only to discuss the value of the researches brought to its notice, but also, through the appointment of scientific committees, to add to knowledge.

THE Lalande medal has been awarded by the Paris Academy of Sciences to Mr. Thomas Lewis, of the Greenwich Observatory, and secretary of the Royal Astronomical Society.

SIR W. H. BENNETT, K.C.V.O., has been elected president of the Incorporated Institute of Hygiene in succession to the late Sir W. H. Broadbent, F.R.S.

AN experiment in the breeding of Maine lobsters in the Pacific Ocean is about to be tried by the U.S. Commission of Sea and Shore Fisheries. A car-load of seed lobsters has already been dispatched by a fast express from the Government hatchery at Boothbay to the western coast.

By the death of Mr. M. Walton Brown, which occurred on November 22, the Institution of Mining Engineers loses an indefatigable secretary and the profession of coal mining one of its most useful representatives. Mr. Walton Brown was the author of numerous papers on mining

engineering, and was the recognised authority in this country on the scientific principles of colliery ventilation.

A DISCUSSION on the subject of "Rivers Pollution from the Naturalist's Point of View" will be introduced by Prof. R. Meldola, F.R.S., at a conference meeting to be held, under the auspices of the Essex Field Club, on Saturday, December 14, at 6 p.m., in the physical lecture theatre of the Municipal Technical Institution, Romford Road, Stratford, Essex.

At the meeting of the Cardiff City Observatory Committee on November 30 it was announced that arrangements are busily proceeding for the installation of a seismograph at the observatory on Penylan Hill. The seismograph is being provided by the Cardiff Naturalists' Society, its upkeep being undertaken by the city council. It is hoped that the instrument may be installed early in the new year, and that Prof. Milne will be able to attend the opening. Prof. Milne has urged the establishment of a seismograph at Cardiff, which will form a triangle with the existing stations at Birmingham and Shide.

We are pleased to learn that Mr. Haffkine has accepted an appointment to a post at Calcutta offered to him by the Secretary of State for India. It will be remembered that Mr. Haffkine was held responsible for an unfortunate accident that occurred in the Punjab in connection with plague inoculation, an accident for which a large body of scientific opinion has pronounced him to be in no way to blame. So far the Secretary of State has recognised the strength of that opinion, but we could have wished that the recognition had taken a form more complete and more in accordance with the true circumstances of the case.

THE Paris correspondent of the *Times* reports that Dr. Jean Charcot, who conducted a successful expedition to the South Polar regions two years ago, is now engaged in the preparation of another expedition to the Antarctic circle. The State has made a credit grant of 24,000*l.* toward the cost, but at least 6000*l.* more will be required. Dr. Charcot intends to start next July. He will proceed by way of Buenos Ayres and Cape Horn to the Antarctic region which he discovered and named "Terre Loubet." The Marquis de Dion has offered Dr. Charcot some motor sledges, so that dogs will not be needed.

THE annual conversazione and exhibition of new apparatus, heretofore held under the auspices of the late British Electro-Therapeutic Society, but now under the electro-therapeutical section of the Royal Society of Medicine, will be held in the Queen's (small) Hall on Friday, December 13. The leading makers of electro-medical and X-ray apparatus are taking part, and many new designs will be shown, so far as possible under working conditions. Communications regarding cards of admission or other matters must be addressed to Dr. Reginald Morton, hon. secretary, 22 Queen Anne Street, Cavendish Square, London, W.

THE American Association for the Advancement of Science will meet at Chicago on December 28. The business meetings commence on December 30, in the morning of which the first general session will be held, and the new president, Prof. E. L. Nichols, will be introduced by Dr. W. H. Welch, the retiring president. In the afternoon addresses will be given by some of the presidents of sections. Prof. Edward Kasner will speak on "Geometry and Mechanics" to the section of mathematics and astronomy; Mr. Richardson will address the section of chemistry on "A Plea for the Broader Education of the

Engineer," and Prof. Conklin will deliver his address to the section of zoology. In the evening of the same day the retiring president will deliver his address. On December 31 Prof. W. C. Sabine will address the section of physics on the "Origin of the Musical Scale"; Mr. Conant the section of social and economic science on the "Influence of Friction in Economics"; and Dr. Flexner the section of physiology and experimental medicine on "Recent Advances and Present Tendencies in Pathology." Messrs. MacDougal, Warner, and Brown will respectively address the sections of botany, mechanical engineering, and education on subjects to be announced later. Mr. Charles L. Hutchinson is the chairman of the local committee, and Mr. J. Paul Goode is the local secretary.

THE following are among the lecture arrangements at the Royal Institution before Easter:—Sir David Gill, a Christmas course of six illustrated lectures on "Astronomy, Old and New," adapted to a juvenile auditory; Dr. A. A. Gray, two lectures on the internal ear of different animals; Prof. W. Stirling, six lectures on membranes, their structure, uses, and products; Dr. E. A. Wallis Budge, three lectures on the Egyptian Sudan, its history, monuments and peoples, past and present; Prof. W. W. Watts, two lectures on (1) the building of Britain, (2) recent light on ancient physiographies; Prof. W. Somerville, two lectures on wood, its botanical and technical aspects; Sir John Rhys, two lectures on Celtic; Dr. R. T. Glazebrook, two lectures on physics; Mr. R. Lydekker, two lectures on (1) the animals of Africa, (2) the animals of South America; Prof. Gisbert Kapp, the electrification of railways; and Prof. J. J. Thomson, six lectures on electric discharges through gases. The Friday evening meetings will commence on January 17, when Prof. T. E. Thorpe will deliver a discourse on the centenary of Davy's discovery of the metals of the alkalis. Succeeding discourses will probably be given by Colonel David Bruce, Prof. E. Rutherford, Dr. C. W. Saleeby, Sir Oliver Lodge, Prof. W. A. Bone, Prof. J. Milne, Prof. A. E. H. Love, the Hon. R. J. Strutt, and Prof. J. J. Thomson.

By the death (which was announced in the *Times* of November 28) of Dr. Carl Bovallius, late professor of zoology at the University of Upsala, Sweden has lost one of her most eminent ethnologists, naturalists, and scientific explorers. A graduate of Upsala, Bovallius took the degree of Ph.D. in 1875, and from some time after that date held the chair of zoology until 1897. In zoology his main subjects were Mollusca and Crustacea, especially the amphipod group of the latter, and the Swedish representatives of both groups. "Contributions to a Monograph of the Amphipoda Hyperidea" is the title of one of his works, the first part (in two numbers) of which was published at Stockholm, 1887-9. It is only by this single part, which appears to be all that was issued, that his name is represented in the catalogue of the Zoological Society's library. Forestry was another of his specialities, and from reports furnished by him as the results of investigations undertaken between 1889 and 1895 the present forest laws of Sweden were based. As an explorer and surveyor he travelled much in Central America from 1881 to 1883, returning again to Nicaragua in 1900, while in 1898-9 he visited southern Venezuela and the Amazons. From these countries he brought extensive zoological and ethnographical collections. In the obituary notice in the *Time* of November 29 he is reported to have made important contributions to the natural history departments of the British Museum, but his name does not appear as a donor in the recently published volumes on the "History of the

Collections" in those departments; and his donations appear to be limited to a few river crustaceans. Dr. Bovallius was the recipient of several decorations from his own and foreign sovereigns, among these being the Grand Cross of the Order of Isabella Catholica and the knighthood of the Danish Order of the Dannebrog, and of the Portuguese Order of St. Iago.

THE ascidians collected on the coast of California by the U.S. Fisheries steamer *Albatross* during the summer of 1904 include a number of new species, which are described by Mr. W. E. Ritter in the *Zoological Publications of California University*, vol. iv., No. 1.

THE greater portion of the October issue of the *American Naturalist* is occupied by a paper by Mr. A. W. Grabau on orthogenetic variation (i.e. variation along definite lines) in the shells of gastropod molluscs. Among the points discussed are the mode of arrangement and development of ribs and spines on the shell.

To Messrs. Witherby and Co. we are indebted for a copy of an illustrated pamphlet entitled "Gilbert White of Selborne." The text formed the subject of a lecture delivered before the Hastings and St. Leonards Natural History Society in June last by Mr. W. H. Mullens. The illustrations include several views of Selborne village, and one of the interior of the church. A good summary of the chief features of White's career will be found in this well-got-up pamphlet, of which the price is half-a-crown.

IN No. 1567 (vol. xxxiii., pp. 197-228) of the *Proceedings of the U.S. National Museum*, Lord Walsingham describes a number of new North American moths of the tineid group, with the addition of a list of genera of the family Blastobasidae. The specimens on which the determinations are based were in part supplied by the U.S. Museum and U.S. Department of Agriculture, and in part contained in the author's own collection. Types of most of the new species are now in the U.S. Museum. Soft river-tortoises (Trionychidae) from various Tertiary horizons in the United States form the subject of a paper by Mr. O. P. Hay published in the *Bulletin of the American Museum of Natural History*, vol. xxxii., pp. 847-863.

To the November issue of the *Zoologist* Mr. W. L. Distant, the editor, contributes the second and concluding part of his article on the extermination of animals, dealing in this instance with the destruction dealt by man. After referring to the destruction of African antelopes and quaggas for the sake of their hides, the author quotes a statement to the effect that in the twenty years from 1856 to 1876 Africa supplied Europe with an annual average of 1,500,000 lb. of ivory, in addition to 250,000 lb. exported to India and about 150,000 lb. to America, this representing the destruction of about 51,000 elephants. Another item which bulks very large is the toll of alligators killed in Florida for their hides, this being estimated at no less than two and a half millions. In Australia, again, we find a flock-owner boasting that in the course of eighteen months he had killed, on his own estate, 64,000 of the smaller marsupials, such as wallabies and kangaroo-rats, in addition to several thousand kangaroos. As the author well remarks, no species can stand such wastage long, and kangaroos and their kin must apparently be exterminated as wild animals at no very distant date.

To vol. xvi. of the *Anales of the National Museum of Buenos Aires* Dr. F. Ameghino contributes no less than 135 pages of "preliminary notes" on an atlas vertebra and imperfect femur (which, so far as we see, may or

may not be associated) from the later Tertiary deposits of Monte Hermosa. On these two specimens, coupled with certain alleged evidence of the existence of an intelligent being at the time the Monte Hermoso strata were deposited, he considers himself justified in naming a new genus and species—*Tetraprothomo argentinus*—of the family Hominidae. Nor is this all, for in the latter part of the paper he publishes a series of phylogenies in which the Ungulata and Primates, together with the Patagonian extinct Carnivora, are derived from a single South American ancestral type, the Microbiotheriidae, a group which most palæontologists now regard as inseparable from the opossums. On a later page we are furnished with the names of a number of non-existent connecting links between "Tetraprothomo" and man and gibbons on the one hand, and earlier forms on the other. It may be added that in one of the hypothetical genera is included the Neanderthal man under the name of *Prothomo neanderthalensis*.

THE fifth annual report of the Horniman Museum and Library, Forest Hill, S.E., dealing with the work of the year 1906, has been issued. The museum is intended to be a teaching institution where the general public, students, and school children may be able to inspect properly labelled specimens exhibited in related series. Saturday morning lectures for teachers and afternoon lectures for the general public have been held with much success. The report contains illustrations of some of the models made by the museum naturalist to illustrate natural phenomena. Among these are diagrammatic models of coral reefs designed to illustrate the manner in which they are built up and the effects of currents on the growth of the reefs. Useful though these models are, their scientific value would have been increased had they been modelled to a true scale, and some indication of the scale given.

THE Bulletin of the Johns Hopkins Hospital for November (xviii., No. 200) contains an interesting paper by Dr. Arthur Meyer on the physician and surgeon in Shakespeare.

THE pages of the *Journal of Hygiene* for October (vii., No. 5) are mainly occupied with two papers on ship beri-beri and scurvy by Prof. Holst and Dr. Frölich. It is stated that ship beri-beri is closely connected with food, and shows a marked congruence with scurvy. By keeping animals on certain diets, conditions were produced simulating human scurvy very closely. The etiology of tropical beri-beri is considered to be outside the field of these investigations.

THE reports of the Board of Health, New South Wales, on the outbreaks of plague at Sydney are important contributions to the epidemiology of this disease, and show conclusively the interdependence of the rat and plague. The latest report, by Dr. Ashburton Thompson, deals with the sixth outbreak, which occurred in 1906. A continuous outlook is kept for infection in rats, large numbers of which are caught and examined. In the fifth outbreak, in 1905, the last case of plague in man occurred on July 12, and the last plague-infected rat was identified on December 5. In 1906, the first plague-rat was identified on January 23, the first case in man occurred on March 12, the last on December 22, and the last plague-rat was identified on December 29. From December 6, 1905, to January 22, 1906, 3225 rats and mice were examined and found to be plague-free. During the epizootic period, January 23 to December 29, 1906, 27,731 rats and mice were examined, among which plague was identified in

174 rats and mice. It is again shown, therefore, that the plague epidemic is preceded by an epizootic among the rats and mice. Notes are given on the species of rodents affected, and on the clinical details of the cases.

THE Bulletin of the Department of Agriculture, Jamaica (August and September), contains articles on the subject of curing vanilla pods for market and on the vanilla industry, also on bastard logwood and cacao cultivation.

WE have received from Messrs. A. E. Staley, of Thavies Inn, London, a list of Bausch and Lomb's new microscope models fitted with an improved form of fine adjustment, also a brochure on the use and care of the microscope.

THE development of the pollen grain in the gymnospermous genus *Dacrydium* is interesting because, according to the account contributed by Miss M. S. Young to the *Botanical Gazette* (September), a number of cells are formed in what is technically known as the microgametophyte. The spore passes out of the single-cell stage when a small prothallial cell is cut off; by another division of the vegetative nucleus a second prothallial cell is formed, and in a similar way a third, the generative cell, is produced. The generative cell gives rise to a sterile and a so-called body cell, the progenitor of the sperm cells. As the second prothallial cell not infrequently divides, the mature pollen grain may show as many as seven nuclei.

IN the *Engineering Magazine* (vol. xxxiv., No. 2) a new mineral industry, the manufacture of radium, is described by Mr. Jacques Boyer. He gives illustrations of the works lately installed at Nogent-sur-Marne, where waggon-loads of various minerals (pitchblende, autunite, chalcilite, carnotite, and thorianite) are treated for an ultimate production consisting of a few minute particles of radium salts.

THE Institution of Engineers and Shipbuilders in Scotland has reached its jubilee year, and in his presidential address Mr. John Ward gave an able retrospect of the events connected with the work of the institution, a subject especially suitable in view of the fact that it is also the centenary of marine engineering as applied successfully to ocean navigation. To the address, which is printed in the *Transactions* (vol. li., No. 1), is appended a useful chronology of events in the evolution of the marine steam engine.

THE problem of peat utilisation, so often pronounced hopeless, may now be considered as practically solved. The Mond Power-Gas Corporation is building a large peat-generator gas-plant near Herne, in Westphalia; Messrs. Crossley Brothers are projecting plants on the basis of their long-continued experiments at Openshaw; and Martin Ziegler has made peat-coke and obtained the chemical by-products, at Oldenburg and at other places, ever since 1897. The Ziegler plant at Beuerberg, in Upper Bavaria, which was opened in 1906, is described in detail in *Engineering* of November 15. The results obtained have been eminently satisfactory, and suggest the possibility of manufacturing at a profit peat-coke and chemicals in Ireland, where from 16 feet to 40 feet of peat can be worked over large areas.

MR. GUSTAVE CANET, past-president of the French Society of Civil Engineers, has honoured the Junior Institution of Engineers by accepting the presidency, and in his inaugural address, which was delivered on November 18, he frankly and critically compared English and French practice in connection with the design and manufacture of artillery. The conditions under which gun-

makers work in the two countries are, he pointed out, essentially different. The whole tendency of French policy has been adverse to the interests of private manufacturers. In Great Britain, on the other hand, there has never been any restriction placed upon manufacturers with regard to the supply, during peace time, of war material to foreign Powers. Hence works of private manufacturers have developed and have acquired vast experience that is a valuable national asset, for they can place all their resources at the disposal of the Government in case of need.

STRIKING evidence of the reduction in working costs and in the number of unskilled coloured labourers effected by the installation of labour-saving appliances in the Transvaal mines is afforded in the paper on the equipment of the New Kleinfontein mine read by Mr. E. J. Way before the Institution of Mechanical Engineers on November 15. A branch line was constructed from the nearest railway station up to the mine, and the surface plant was equipped with a complete system of conveyors and elevators for handling all coal, ash, ore, waste rock, and residue sands, whilst the stopes underground have been provided with swinging conveyors specially designed to permit the rapid and easy dismantling and re-erection necessitated by blasting requirements and by the constant shifting of the working faces of the stopes. The actual annual reduction in the working costs due to the installation of labour-saving appliances is equivalent to a saving of nearly 3s. per ton milled.

THE Institution of Mining and Metallurgy has drawn up a series of standard weights and measures with the object of securing uniformity in scientific papers. The word "ton" shall, it is decided, represent a weight of 2000 lb. avoirdupois; the word "gallon" shall represent the Imperial gallon measure of 10 lb. of water. Temperatures shall be expressed in degrees centigrade. Returns of gold and silver shall be expressed in terms of fine gold and fine silver respectively, not as "bullion." Gold contents of ores, determined by assay, shall be expressed in money values as well as in weights; and in this connection the value shall be taken (as a convenient constant) at 85s. per troy ounce of fine gold. The adoption of these definitions in assay returns will doubtless obviate much of the existing confusion, but it is to be feared that the use of the new ton of 2000 lb. would, in the case of statistics of mineral production, not be so convenient as the statute ton of 2240 lb. or the metric ton of 2204 lb., both of which may legally be employed.

IN the *Transactions* of the Institution of Engineers and Shipbuilders in Scotland, Dr. Victor Cremieu describes his proposed apparatus for extinguishing the rolling of ships, some references to which have appeared in the daily Press. One method involves the use of a heavy sphere rolling in viscous liquid in a curved tube at the bottom of the ship; in the second form the moving weight takes the form of a pendulum swinging in a chamber in the form of a sector of a circle, again filled with viscous liquid. The paper contains no reference to what would happen in the event of the weight striking the boundaries of the chamber in a heavy sea or in a disaster.

IN the *Rendiconto* of the Naples Academy (Mathematical and Physical Section), xiii., 3 and 4, Profs. F. Bassani and C. Chistoni direct attention to a recently formed orifice in the Solfatara of Pozzuoli. This opening was first seen on February 2, and the authors consider that it affords an excellent opportunity for the study of geophysical problems connected with the changes of level of the well-known temple of Serapis. They propose that a series of observ-

ations should be undertaken at once under the control of the department of geophysics of the University of Naples pending the formation of the geophysical institution which is to be established at Pozzuoli, and that Government assistance should be asked for the necessary means of carrying on the temporary researches rendered urgent by the present eruption. Prof. Bassani, in conjunction with Dr. A. Galdieri, describes further observations on the windows broken at Ottajano during the eruption of Vesuvius of 1906, and maintains their view, which has been doubted by other writers, that the damage was done by lapilli driven against the windows by the action of wind.

"THE Climate of Abbassia, near Cairo," is the title of No. 3 of the useful Survey Department papers now being issued by the Egyptian Ministry of Finance. The observatory at Abbassia was founded by the Khedive Ismail Pasha in 1868, and was removed to Helwan in 1903. Summaries of the observations have been issued from time to time, except for the five years before the removal; the present report contains a careful discussion, by Mr. B. F. E. Keeling, of the results of those five years and summaries of the mean values for the whole thirty-five years. The mean annual temperature was $70^{\circ} \cdot 2$; January, $54^{\circ} \cdot 1$; July, $83^{\circ} \cdot 5$; the absolute extremes, $117^{\circ} \cdot 1$ (August, 1881) and $28^{\circ} \cdot 4$ (February, 1880). Rainfall is very small; the mean for seventeen years was only 1.18 inches; from June to September, inclusive, no rain falls. There are about 3100 hours of bright sunshine annually, not far from double the average amount in the south of England. Series of charts show the mean annual and daily curves for each of the principal elements.

We have recently had an opportunity of inspecting and testing the binocular diffraction spectroscope patented and sold by Dr. Marshall Watts, and have found it to be a remarkably efficient instrument for the spectroscopic investigation of light-sources of definite form, such as vacuum tubes. It consists of an ordinary good field-glass having attached in front of each object-glass a transparent diffraction grating mounted on optically worked plane glass. In examining a luminous vacuum tube we found that the bright lines apparently stood out in relief, whilst the illumination, even in the second and third orders, was very satisfactory. The first-order spectrum of Capella, on by no means a perfect night, was seen as quite a bright colour band. For the examination of broader light-sources, such as flames or arcs, a metal or ebonite plate with a slit in it may be usefully employed in order to obtain a purer spectrum. The price of the binocular spectroscope is 3*l.* 3*s.*, and further details of the instrument may be obtained from Dr. Watts, "Shirley," Venner Road, Sydenham.

THE fortieth anniversary of the existence of the German Chemical Society was celebrated recently in Berlin. We learn from the *Times* that the meeting was devoted to retrospective addresses on important achievements of chemistry during the last forty years. Prof. Nernst delivered an address on physical chemistry; Prof. Landolt spoke on the development of inorganic chemistry; Prof. Graebe described the successes of the chemistry of the carbon compounds by the process of synthetical combinations; and Prof. Otto N. Witt, who discussed the development of technical chemistry, remarked that technical chemistry has brought about a revolution in productive industry mainly by the aid of electrotechnical science. Prof. Witt directed attention to the manufacture of cellulose from wood leading to the changed methods in the production of paper, to the employment of nitro-cellulose for the preparation of

silk-like substances for weaving, to the synthetic production of indigo and alizarin, and to the fixation of atmospheric nitrogen.

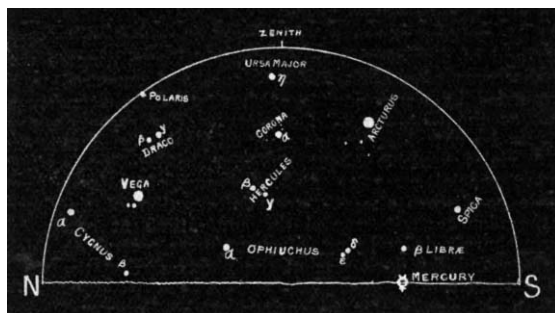
THE current number of the *Oxford and Cambridge Review*, the second issue, contains two articles dealing with scientific subjects. Mr. J. Butler Burke contributes an article on "Haeckel and Haeckelism," and the headmaster of Eton College, under the title "More about Biometry," tells of the introduction of the system of anthropometric measurement of the boys at Eton, and refers to this movement as "a united act of faith in the desirability of knowledge for its own sake."

A SECOND edition, which has been revised and enlarged, of "The Practice of Soft Cheesemaking: a Guide to the Manufacture of Soft Cheese and Preparation of Cream for Market," by Messrs. C. W. Walker-Tisdale and Theodore R. Robinson, has been published by Mr. John North at the office of the *Dairy World and British Dairy Farmer*. The characteristics of the book were described in a review of the first edition which appeared in *NATURE* for June 9, 1904 (vol. lxx., p. 137). The practice of making soft cheese is increasing in this country, and this new edition of a useful book should assist small holders endeavouring to gain a livelihood from the land.

OUR ASTRONOMICAL COLUMN.

MERCURY AS A MORNING STAR.—Although the present elongation of Mercury—the planet was at greatest western elongation ($20^{\circ} 20'$) at 2h. on Sunday last—is not so favourable for the naked-eye observation of the planet as those which took place in February and August respectively, there is a possibility that during the next day or two observers may be able to pick up this elusive object near the eastern horizon just before dawn. On December 6 the planet will rise at 5h. 57m. a.m., the sun at 7h. 51m., whilst on December 8 the respective times will be 6h. 4m. and 7h. 54m.

At this season of the year an object near the horizon is not easy to find, and the would-be observer would do well to learn beforehand the exact rising point, and then



Relative positions of Mercury and bright stars at 6 a.m. December 6; observer facing due east.

to get into such a position that the horizon thereabouts is quite free. The planet rises a little less than 30° S. of E., and this direction may be noted, and in some way marked, on the previous evening, by observing the rise of Sirius, which takes place in the same azimuth at about 9 p.m. β Libræ rises about an hour before Mercury at a point some 15° nearer the east point.

The accompanying rough sketch-map may assist the observer to locate the planet. It is intended to show the approximate position of the stars, with the observer facing due east, at the time that Mercury rises, the stars being shown here as projected on to a plane parallel to the plane of the meridian.

A BRIGHT METEOR.—An exceptionally bright meteor was observed by Mr. T. F. Connolly, at South Kensington, at